

INST PARASITOLOGY

JOURNAL OF NEMATOLOGY

Official Journal of

THE SOCIETY OF NEMATOLOGISTS

VOLUME 12
QUARTERLY IN
1980

Editor-in-Chief
BENJAMIN F. LOWNSBERY

Editorial Board

R. H. Mulvey Joseph A. Veech
B. F. Lownsbery R. S. Hussey
Howard Ferris

Associate Editors

Donald P. Schmitt Gregory R. Noel
David R. Viglierchio Robert T. Robbins
I. A. Siddiqui Kenneth A. Wright

Technical Editor
Kathleen K. Leabo

CONTENTS**JOURNAL OF NEMATOLOGY****Vol. 12, No. 1****January 1980**

Population Response to Temperature in the Subfamily Tylenchorhynchinae: R. B. Malek	1
Managing Nematode Population Densities on Tomato Transplants Using Crop Rotation and a Nematicide: A. W. Johnson and G. M. Campbell	6
Resistance of Anhydrobiotic <i>Aphelenchus avenae</i> to Methyl Bromide Fumi- gation: D. W. Freckman, Y. Demeure, D. Munnecke, and S. D. Van Gundy	19
Morphological Comparison of <i>Meloidogyne</i> Males by Scanning Electron Microscopy: J. D. Eisenback and Hedwig Hirschmann	23
Influence of Climate and Cropping Patterns on the Efficacy of Ethoprop, Methyl Bromide, and DD-MENCS for Control of Root-knot Nematodes: W. A. Rohde, A. W. Johnson, C. C. Dowler, and N. C. Glaze	33
Dispersion, Dissipation, and Efficacy of Methyl Bromide-Chloropicrin Gas vs. Gel Formulations on Nematodes and Weeds in Tifton Sandy Loam: W. A. Rohde, A. W. Johnson, L. V. White, D. L. McCallister, and N. C. Glaze	39
Mass Production of the Mosquito Parasite <i>Romanomermis culicivorax</i> : Effect of Density: James J. Petersen	45
Feeding Behaviour and Histopathology of <i>Hirschmanniella oryzae</i> , <i>H.</i> <i>imamuri</i> , and <i>H. spinicaudata</i> on Rice: J. O. Babatola and J. Bridge	48
Effect of Nonhost Cultivars on <i>Heterodera schachtii</i> Population Dynamics: G. D. Griffin	53
Interrelations between <i>Meloidogyne javanica</i> , <i>Rotylenchulus reniformis</i> , and <i>Rhizobium</i> Sp. on <i>Vigna sinensis</i> : A. H. Y. Taha and A. S. Kassab	57
Biology, Life Cycle and Redescription of <i>Neoaplectana bibionis</i> Bovien, 1937 (Nematoda: Steinernematidae): W. M. Wouts	62
Electron Microscopy of the Stomatostylet and Esophagus of <i>Criconemoides</i> <i>curvatum</i> : T. A. Chen and G. Y. Wen	72
RESEARCH NOTES	
Histopathology of <i>Rotylenchulus reniformis</i> on Sunflower: A. F. Robinson and C. C. Orr	84
Reproduction and Pathogenicity of Three Isolates of <i>Meloidogyne hapla</i> Race A on Concord Grapes: G. S. Santo and R. W. Hackney	86
Embryogenesis of <i>Hemicyclophora epicharoides</i> Loof, 1968 (Nematoda: Hemicyclophorinae), and Description of the Male: N. Vovlas and R. N. Inserra	87

Vol. 12, No. 2**April 1980**

Effect of Phenamiphos on <i>Heterodera schachtii</i> and <i>Meloidogyne javanica</i> : N. Greco and I. J. Thomason	91
The Biology of <i>Rotylenchulus macrodoratus</i> : R. N. Inserra and N. Vovlas	97
Behavioral Effects of Carbofuran and Phenamiphos on <i>Pratylenchus vulnus</i> . I. Motility and Dispersion: N. Marban-Mendoza and D. R. Viglierchio	102
Behavioral Effects of Carbofuran and Phenamiphos on <i>Pratylenchus vulnus</i> . II. Attraction to Bean Roots: N. Marban-Mendoza and D. R. Viglierchio	114
Behavioral Effects of Carbofuran and Phenamiphos on <i>Pratylenchus vulnus</i> . III. Penetration and Development: N. Marban-Mendoza and D. R. Viglierchio	119
"Blinding" of shoots and a leaf gall in <i>Amsinckia intermedia</i> induced by <i>Anguina amsinckiae</i> (Steiner and Scott, 1934) (Nemata, Tylenchidae), with a note on the absence of a rachis in <i>A. amsinckiae</i> : C. Nagamine and A. R. Maggenti	129
Comparative Calorie Values of Nematodes: Neil A. Croll and Kamala de Soyza	132
Plant-parasitic Nematode Distributions in an Alfalfa Field: P. Goodell and H. Ferris	136
Histopathogenesis of the Galls Induced by <i>Nothanguina phyllobia</i> in <i>Solanum elaeagnifolium</i> : J. A. Skinner, C. C. Orr, and A. F. Robinson	141
RESEARCH NOTE	
Graphic Techniques for Illustrating Distribution Data: P. Goodell and H. Ferris	151

Vol. 12, No. 3**July 1980**

The Development of Nematology on a World Basis: J. N. Sasser and K. Krishnappa	153
Nematology—Status and Prospects: Let's Take Off Our Blinders and Broaden Our Horizons: Seymour D. Van Gundy	158
Nematology—Status and Prospects: Practical Implementation of Quantita- tive Approaches to Nematology: H. Ferris	164
Nematology—Status and Prospects: The Role of Nematology in Integrated Pest Management: G. W. Bird	170

Interaction of <i>Uromyces phaseoli</i> and <i>Meloidogyne incognita</i> on Bean: M. G. Bookbinder and J. R. Bloom	177
Effects of Nematicides, Lime, and Herbicide on Peach Tree Short Life in Georgia: E. J. Wehunt, B. D. Horton, and V. E. Prince	183
Species of <i>Pratylenchus</i> Associated with <i>Solanum tuberosum</i> cv Superior in Ohio: M. J. Brown, R. M. Riedel, and R. C. Rowe	189
Effects of Temperature on Rate of Feeding of the Plant Parasitic Nematodes <i>Rotylenchus robustus</i> , <i>Xiphinema diversicaudatum</i> , and <i>Hemicyclophora conida</i> : B. Boag	193
Inhibition of Syncytia Formation and Root-knot Nematode Development on Cultures of Excised Tomato Roots: D. Orion, W. P. Wergin, and B. Y. Endo	196
Multiyear Population Dynamics of <i>Ditylenchus dipsaci</i> Associated with <i>Phlox subulata</i> : L. S. Schnabelrauch, K. C. Sink, Jr., G. W. Bird, and F. F. Laemmlen	203
Redescription and Life History of <i>Contortylenchus brevicomi</i> , a Parasite of the Southern Pine Beetle <i>Dendroctonus frontalis</i> : A. E. MacGuidwin, G. C. Smart, Jr., and G. E. Allen	207

Vol. 12, No. 4**October 1980**

Abstracts of Papers Presented at the Nineteenth Annual Meeting of the Society of Nematologists, New Orleans, Louisiana, August 10-13, 1980	213
Biocontrol: Fungi as Nematode Control Agents: R. Mankau	244
Biocontrol: Fungal Parasites of Male Cyst Nematodes: Brian Kerry	253
Biocontrol: <i>Bacillus penetrans</i> and Related Parasites of Nematodes: R. M. Sayre	260
Biocontrol: The Potential of Entomophilic Nematodes in Insect Management: John M. Webster	270
Effect of the Nematode <i>Contortylenchus brevicomi</i> on Gallery Construction and Fecundity of the Southern Pine Beetle: A. E. MacGuidwin, G. C. Smart, Jr., R. C. Wilkinson, and G. E. Allen	278
A Classification of <i>Tylenchulus semipenetrans</i> Biotypes: R. N. Inserra, N. Vovlas, and J. H. O'Bannon	283
Interrelationship of <i>Meloidogyne hapla</i> and <i>Ditylenchus dipsaci</i> on Resistant and Susceptible Alfalfa: G. D. Griffin	287
Effects of One and Two Applications of Nematicides on Nematode Populations and Soybean Yields: N. A. Minton, M. B. Parker, and C. E. Perry	294
Morphological Comparison of <i>Meloidogyne</i> Female Head Structures, Perineal Patterns, and Stylets: J. D. Eisenback, Hedwig Hirschmann, and A. C. Triantaphyllou	300

Population Increase of <i>Pratylenchus hexincisus</i> on Corn as Related to Soil Temperature and Type: M. E. Zirakparvar, D. C. Norton, and C. P. Cox	313
Description and SEM Observations of <i>Meloidogyne chitwoodi</i> n. sp. (Meloidogynidae), a Root-knot Nematode on Potato in the Pacific Northwest: A. Morgan Golden, J. H. O'Bannon, G. S. Santo, and A. M. Finley	319

RESEARCH NOTES

Measurement of the Vertical Migration of <i>Anguina tritici</i> (Steinbuch 1799) Chitwood, 1935 in Soil under Experimental Conditions: Donald P. Limber	328
Isolation of <i>Strelkovimermis peterseni</i> , a Mermithid Parasite of Anopheline Mosquitoes in Northeastern New York: Daniel Molloy and Stephen P. Wraight	330
INDEX FOR VOLUME 12 (1980)	2
TABLE OF CONTENTS FOR VOLUME 12 (1980)	i-v

**BACK ISSUES OF JOURNAL OF NEMATOLOGY
AVAILABLE AT REDUCED PRICES**

Single volumes 1 through 11 are available at \$8.00 for subscribers (\$76.00 for complete set of 11 volumes), or \$6.00 per volume for any member of the Society of Nematologists (\$62.00 for complete set of 11 volumes). Volume 12 may be purchased by subscribers for \$13.00 or by members for \$10.00. Add \$1.25 per volume for postage and handling in the USA; \$2.50 per volume outside of USA.

Please indicate volumes desired and send check or money order, including postage and handling to: Dr. Richard S. Hussey, Dept. of Plant Pathology, University of Georgia, Athens, GA 30602.